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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,206	03/10/2004	Ju-Yeon Lee	0465-1159P	2419
2292	7590	06/17/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ZEC, FILIP	
			ART UNIT	PAPER NUMBER
			3744	

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

5A

Office Action Summary

Application No.

10/796,206

Applicant(s)

LEE, JU-YEON

Examiner

Filip Zec

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-20 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,623,828 to Harrington, in view of U.S. Patent 6,370,882 to Adamski et al. and U.S. Patent Application Publication 2002/0156509 to Cheung. Harrington discloses applicant's basic inventive concept, a wearable cooler (FIG. 1), comprising a thermoelectric module (40, FIG. 2), at least one first heat sink (33, FIG. 2) provided at a side of the thermoelectric module, a second heat sink (34, FIG. 2) provided at an opposite side of the first heat sink on the basis of the thermoelectric module, at least one first fan (32, FIG. 2), an external case (12) surrounding the first heat sink and the first fan, and having at least one air inlet (16) and at least one air outlet (14), wherein the air inlet is corresponded to the first fan (see FIG. 2), wherein the air outlet is provided in all directions at the external case (col 3, lines 46-47), wherein the first fan comprises an axial flow fan (see FIG. 2, blade 32), wherein the air outlet is adjustable to change the direction according to a user need (col 3, lines 46-47), wherein the second heat sink comprises a contact guard (22 and 23, FIG. 2) and wherein the second heat sink further comprises a projection part (19) on a surface being in contact with the contact guard for maintaining a predetermined distance from the contact guard, substantially as claimed with the exception of

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stating that the thermoelectric module is provided on clothes for absorbing and discharging heat according to an electric current, that said first fan is provided at an opposite side of the thermoelectric module on the basis of the first heat sink for blowing air to the first heat sink, at least one second fan provided at an opposite side of the thermoelectric module for blowing air to the second heat sink on the basis of the second heat sink, wherein the first heat sink is provided at an outside of the clothes, wherein each of the first fan and the second fan comprises an axial flow fan, wherein the second heat sink comprises a space at a skin side opposite to a side of the thermoelectric module, for containing the second fan, wherein the second fan comprises a centrifugal fan, said guards having an opening being corresponded to the second fan at an opposite side of the thermoelectric module and wherein the second heat sink and the external case are provided on a rear side of the clothes and further comprising an electric current controller for supplying power to the thermoelectric module and controlling the electric current. Cheung shows a thermoelectric module (11, FIG. 2), provided on clothes ([0003], lines 4-8) for absorbing and discharging heat according to an electric current, wherein the first heat sink is provided at an outside of the clothes (see FIG. 2) and further comprising an electric current controller (43, FIG. 3) to be old in the garment refrigeration art. Adamski shows a first fan (62a and 62b, FIG. 7), provided at an opposite side of the thermoelectric module on the basis of the first heat sink for blowing air to the first heat sink (top of 26a and 26b), at least one second fan (50, FIG. 8) provided at an opposite side of the thermoelectric module for blowing air to the second heat sink on the basis of the second heat sink (bottom of 26a and 26b), wherein the second heat sink comprises a space (28a, FIG. 2) at a skin side opposite to a side of the thermoelectric module, for containing the second fan, wherein the second fan comprises a

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centrifugal fan (see FIG. 8), said guards having an opening (52, FIG. 2) being corresponded to the second fan at an opposite side of the thermoelectric module. Also, it would have been obvious to one having ordinary skill in the art to use the axial fan for both the first and the second fan, since Harrington already is using the axial fan as the first fan, in order to reduce the cost of the system. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Cheung and Adamski to modify the system of Harrington, by adding a second fan in order to provide a better air flow across the heat sinks of the thermoelectric module (Adamski: col 3, lines 64-67; col 4, lines 1-36, specifically lines 17-22) and having the system as a part of a garment in order to have the thermoelectric module closer to user's skin and spread the heat exchange evenly over a larger area ([0028], lines 4-8), using the electric current controller.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,623,828 to Harrington, in view of U.S. Patent 6,370,882 to Adamski et al. and U.S. Patent Application Publication 2002/0156509 to Cheung, as applied to claim 9 above, and further in view of U.S. Patent 6,516,624 to Ichigaya. Harrington in view of Adamski and Cheung discloses applicant's basic inventive concept, a wearable cooler, comprising a thermoelectric module, provided at a skin side on a basis of the second heat sink and the second fan (see FIG. 2, Cheung), substantially as claimed with the exception of stating that at least a portion thereof through which air passes by the second fan comprises gauze. Ichigaya shows the use of gauze (col 14, lines 26-33) to be old in the garment refrigeration art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made from the teaching of Ichigaya to modify the system of Harrington in view of Cheung and Adamski, by

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having the gauze in between the skin and the cooling system in order to prevent the wetting of the skin, from condensation of the second heat sink (col 14, lines 25-26).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,715,298 to Guo, Chen et al. teaches an indirect thermoelectric cooling device.

U.S. Patent 4,640,284 to Ruderian, Max J. teaches hot and cold direct contact applicator.

U.S. Patent 4,782,664 to Sterna, Jaroslaw et al. teaches a thermoelectric heat exchanger.

U.S. Patent 4,470,263 to Lehovec, Kurt et al. teaches a Peltier-cooled garment.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is (571) 272-4815. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Filip Zec
Examiner **CHERYL TYLER**
Art Unit 3744 **SUPERVISORY PATENT EXAMINER**

FZ